

REMARKS

Claims 1, 55-56 and 58-61, 63-69, and 71-83 are currently pending in this application. Claims 75-77 are withdrawn from consideration as non-elected inventions. Claims 53-54, 62, and 70 have been deleted. Claim 1 has been amended to include the subject matter in claim 53. Support for the amendment in claims 1 and 69 regarding the phosphopantetheinyl transferase is found in Example 2. Claim 58 has been amended to further define the *prpA-D* operon, which support is found in Example 4. Support for the amendment to claim 61 is found in Example 3. Claim 61, 63, 67, 69, and 71-72 have amended or further amended to make technical changes as suggested by the Examiner. Withdrawn claim 77 has been amended to include R=H in the formula for clarity. No new matter has been added. All changes to the claims including deletion thereof or amendments thereto have been made without prejudice to applicants' right to file a divisional application containing claims of similar scope.

Claims 78-83 have been added. Support is found in original claims 75-77. Upon allowance of the present application it is respectfully submitted that these claims are considered and claims 75-77 are rejoined.

The specification has been amended to address the objections in paragraph 14, on page 9 of the Office Action, to include the U.S. patent numbers for each of the cited applications which have been issued.

Applicants gratefully acknowledge the Examiner's withdrawal of the objections and rejections as set forth in paragraphs 3-9 of the Office Action.

Claim Rejections under 35 U.S.C. § 112, first paragraph

Claims 61, 64-69 and 72-74 stand rejected under 35 U.S.C. § 112, first paragraph, written description as allegedly adding new matter, and under 35 U.S.C. § 132 as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. Claim 62 and 70 have been deleted and therefore the rejection as to these claims is moot. Claim 61 has been amended to include a combination of the *matBC* gene and thus this claim and those claims dependent thereon address the Examiner's rejection.

Claims 1 and 53-56, and 58-74, stand rejected under 35 U.S.C. § 112, first paragraph, written description, as allegedly containing expression systems that are defined solely by function and without any structural limitations. Claims 53-54, 62, and 70 have been deleted and therefore the rejection as to these claims is moot. With regard to the remaining claims, claims 1 and 69 have been amended to specifically include the *pccB* and *accA2* genes from *S. coelicolor* and has further defined the phosphopantetheinyl transferase as that which is capable of phosphopantetheinylating the PKS. Therefore, it is believed the Examiner's rejection as to these claims and those claims dependent thereon have been addressed. With regard to claim 61, this claim has been amended essentially as the Examiner has suggested in order to overcome the rejection.

Claim 58 is rejected under 35 U.S.C. § 112, first paragraph, enablement. The claim has been amended to include the embodiments that the Examiner indicated were enabled.

Therefore, it is respectfully submitted that all the written description and enablement rejections have been addressed, and withdrawal of these rejections is respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 61, 62, 64, 65 and 67-68 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kao *et al.* Claim 61 has been amended to define the *matBC* gene in addition to endogenous *matBC* found in *Streptomyces*. Example 3 describes an embodiment where a whole cell is modified by creating a *matBC* gene on a replicating plasmid. As such, this disclosure inherently indicates that an additional *matBC* copy is present. In addition, the preamble requires that there is an enhanced synthesis of a polyketide and such enhanced synthesis requires the presence of an additional copy of the *matBC* gene.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 1, 53-55, 58-60, and 69-73 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term “phosphopantetheinyl transferase” has been found to be allegedly unclear. Claims 1 and 69 have been amended to further define the phosphopantetheinyl transferase as one that phosphopantetheinylates the PKS. According to U.S. Pat. No. 6,258,566 cited by the Examiner, which corresponding PCT application was incorporated by reference in the present application (please see page 16 , line 21 of the present specification), it is preferable to use holo ACP synthases that are specifically associated with polyketide synthesis (please see column 5, lines 26-30 of the ‘566 patent). The patent also provides an assay by which a skilled artisan can determine whether a particular ACP synthase is effective in the pantetheinylation of a PKS. In particular, Example 6 therein provides detailed teachings to those of ordinary skill in the art regarding how to test holo ACP synthases for activity. Thus, is it respectfully submitted that a skilled artisan would understand the metes and bounds of a phosphopantetheinyl transferase that phosphopantetheinylates a PKS as presently defined.

Claim 54 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term “biotin ligase” has been found to be allegedly unclear. Claim 54 has been deleted thus rendering this rejection moot.

Claim 58 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term “disabled” has been found to be allegedly unclear as to its metes and bounds. Claim 58 has been amended to define the *prpA-D* operon as being deleted or not expressed thus addressing this rejection.

Claims 66 and 72 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term “the mat gene” has been found to allegedly have improper antecedent basis. Claim 61 has been amended to identify the *matBC* gene thus addressing this rejection.

Claim 67 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term “the PKS” has been found to allegedly have improper antecedent basis. Claim 67 has been amended to change its dependency from claim 61 to claim 64 to correct such basis.

It is believed that the above amendments address all of the indefiniteness rejections and withdrawal of these rejection is respectfully requested.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 286002021100. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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